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ABSTRACT

This handbook for using the Entrepreneurship Training Components is divided into six sections. The entrepreneurship project overview discusses the background and purpose of the project, how the modules are organized, what makes these materials unique, module format, and purpose of the handbook. The section on training components examines the module development process, module titles and elements, module content summaries, and purpose and use of the resource guide. Advantages of these components to the administrator, instructor, and student are explored in the third section. Administrative considerations such as need, compatibility, key support, initial planning, and program implementation are examined in the fourth section. Section 5 lists instructor considerations and recommendations. These include instructional strategies, options for use of the modules, recommended planning, and daily management of the program. And finally, in the last section, evaluation of the implementation is discussed, including instructional evaluation and student outcome information. A list of references concludes the handbook. (CT)

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Entrepreneurship Training Components

A Handbook on Utilization of the

Entrepreneurship Training Components for

Vocational Education

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A Handbook on Utilization of the Entrepreneurship Training Components for Vocational Education

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May 1981

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I. ENTREPRENEURSHIP PROJECT OVERVIEW

Background

The American economy is in large measure dependent on the efforts of small business entrepreneurs, and the desirability of self-employment has been evident throughout the history of the United States. During our country's strivings for autonomy 200 years ago, self-employment was the commonplace status in such diverse occupations as shopkeeper, farmer, cooper, mechanic, blacksmith, artisan, physician, shoemaker, attorney, and tailor.

Two centuries later, self-employed men and women--managers of one-person enterprises as well as those who employ others in a small business--number approximately 13 million (Small Business Administration, 1978). Small businesses comprise 97% of all unincorporated and incorporated businesses in the United States. More than half of all business receipts are generated by the operation of this large percentage of American businesses. More than half of all employed people in this country work for these companies and businesses (SBA, 1977). In the period from 1969 to 1976, small businesses generated 88% of the new job openings in this country.

Yet, the small business failure rate is high and is cited frequently in popular literature. Changing Times (February 1979), for example, states that about half of all new businesses fail before they complete the second year.

Dun and Bradstreet found that 90% of all business failures can be attributed to poor management (SBA, 1978). Similarly, Changing Times (December 1976) enumerated the following problems associated with owning and managing a small business.

- The pace of managing a small business is sometimes hectic. The aspects to be considered are multi-faceted, and there are a variety of decisions to be made.

- Entrepreneurs must acquire knowledge and skills before they begin a business to avoid mistakes that are made again and again. These mistakes result from the owner's inexperience and lack of knowledge.

- Prospective business owners need skills in determining the capital necessary for their endeavor and finding ways of obtaining it, in planning ahead, in bookkeeping, in marketing, and in personnel management.

In short, would-be entrepreneurs are setting out unprepared to achieve their goals. There is clearly a lack of materials and training available to acquaint students with the advantages and disadvantages of becoming an entrepreneur as well as with problem-solving strategies necessary for successful business ownership.

Some attempts to train students in entrepreneurial skills were initiated in the 70s, but these efforts were fragmented. The Minority Business Development Agency of the U.S. Department of Commerce, the Small Business Administration, and education agencies at the state and local levels all expressed the opinion that vocational education students could benefit from an expanded and improved entrepreneurship curriculum at the secondary level.

Entrepreneurship Project Purpose

In 1979, the U.S. Department of Education (ED) contracted with the American Institutes for Research (AIR) to create entrepreneurship training components for use in vocational instructional programs at the secondary level. The purpose of this project was to consolidate what had already been done in the area of entrepreneurship instruction and to augment existing materials as necessary to form entrepreneurship training components suitable for use in the seven major vocational disciplines. These materials make young people aware of the option of entrepreneurship as an alternative career choice, and expose them to the skills required for success. As these students learn a technical skill in their regular vocational courses, introduction of the entrepreneurship materials allows them

to consider realistically whether small business ownership may be appropriate for them.

There are also economic benefits to this type of training. A recent survey of the vocational education community indicated that a major thrust of current programs is making vocational training contribute to our national goal of economic recovery from ills such as declining productivity, inflation, and unemployment. If vocational instructors think of training job providers (entrepreneurs who will start a small business and hire employees) rather than job takers (employees who will occupy an existing job slot), the result will certainly benefit the American economy.

AIR's two-year project had three major objectives:

- to develop 36 entrepreneurship instructional modules for use in the seven major vocational disciplines at the secondary level;
- to determine the effectiveness of the materials by field testing them at sites representing a wide range of possible users; and
- to create awareness of the materials' availability and encourage the use of the modules in secondary-level vocational courses.

Throughout the project, AIR staff were advised by the ED Project Officer, a National Review Panel, and other experts in vocational education and entrepreneurship. The National Review Panel were people who, as a group, met the following criteria:

- experience in entrepreneurship instructional materials;
- related and recent work in curriculum development, field testing curriculum materials, conducting workshops, teacher education, secondary education, and state-level administration;
- representation of each of the seven major vocational education disciplines; and
- expressed interest in the study, and ability to adapt to the study's schedule.

Module Organization

The entrepreneurship materials produced by this project consist of a "core" module of general entrepreneurship concepts and 35 business-specific modules. The modules are listed and described in more detail in Chapter II. The core module covers basic skills in eight areas: (1) initial planning; (2) personnel management; (3) purchasing and inventory management; (4) daily operations; (5) pricing; (6) advertising and selling; (7) financial recordkeeping; and (8) business maintenance and growth. These skill areas were identified as those that seem to make the difference between small business success or failure. The core module was designed to be a prerequisite to each of the other 35 modules, which cover the same skill areas in specific businesses identified as being likely to provide entrepreneurship opportunities. These businesses are distributed across the seven vocational disciplines. The core module may be studied by students prior to use of a business-specific module related to their career plans or to the vocational course in which they are enrolled. Alternatively, the core module may be used by teachers to obtain a broader survey of entrepreneurship principles in preparation for presentation of one or more business-specific module(s) to students.

What Makes These Materials Unique?

Other materials that contain a clear, comprehensive coverage of essential entrepreneurship skills have been developed. For example, Small Business Management and Ownership (Holt, et al., 1979) and PACE: A Program for Acquiring Competence in Entrepreneurship (National Center for Research in Vocational Education, 1980) offer good presentations of information about small business ownership and management. (See the Resource Guide of Existing Entrepreneurship Materials for annotations.) However, these resources treat entrepreneurship on a generic basis. None of these materials goes one step further to show how general business management skills can be applied in running a specific business.

The 35 business-specific modules in the ETC series were designed to acquaint a variety of vocational students with entrepreneurship opportunities in areas associated with their skill development, job placement, and/or career goals. The AIR project staff feel that this second tier of instruction (i.e., showing students how their technical skills can be combined with business management skills to run a specific business) is especially important in working with secondary-level students.

Some business-specific entrepreneurship materials have been developed by organizations such as the Small Business Administration, American Entrepreneurs Association, and the Bank of America (see the Resource Guide for series produced by these organizations). However, these materials--while they are informational--are not instructionally oriented, and they do not contain learning activities. Also, they typically are targeted for adults who have already made the decision to start a business. Therefore, the ETC modules are the only materials to date that have been developed for use by students in a classroom setting to learn about entrepreneurship on both a general and business-specific basis.

Module Format

Each module consists of a Student Guide and a Teacher Guide, which are described in detail in Chapter II. The modules use a case study approach, presenting portions of business case studies illustrating principles highlighted in the text. A variety of learning activities are provided to help students apply their learning. The modules are divided into units related to the crucial entrepreneurship skill areas, with specific student objectives for each unit. The Teacher Guides give suggestions for presenting the material to students. The modules are designed to be flexible: they can be used by individual students working alone, by groups of students working under a teacher's direction, or on an independent study basis.

The core module is designed to cover a minimum of 16 class periods; the business-specific modules cover 10 class periods each. These are

minimum time estimates; a teacher using all of the learning activities and instructional strategies suggested will find that the modules provide material for many more class periods.

The module covers are color-coded according to the vocational education discipline for which each module was developed; the materials are three-hole punched for notebook insertion. All materials display the ETC logo, which stands for Entrepreneurship Training Components. ETC--as the abbreviation for et cetera--also alludes to the fact that entrepreneurship is an additional career option for students.

Purpose of the Handbook on Utilization

The purpose of this Handbook is to provide direction in use of the entrepreneurship materials. It is designed to meet the needs of three types of audiences:

- people responsible for conducting inservice education programs, including staff development for state and local supervisors of vocational education and local classroom instructors;
- people who have acquired the entrepreneurship materials and are incorporating them into existing programs; and
- potential users who are considering use of the materials.

This handbook for using the Entrepreneurship Training Components (ETC) is not a prescriptive set of rules to be followed by teachers. Rather, it is designed to provide a brief background to the components and their elements so the potential user can decide how existing program needs can be met by using the modules. Alternatives for use and procedures for implementing these alternatives are presented.

Every school program has unique missions and goals. The ETC was designed to be compatible with a variety of institutional settings; to be adaptable for use with students having different skill levels; to conform

to a variety of instructional methods; and to be usefully adopted in whole or in part within existing programs.

Use of a new curriculum or its components involves both teacher and administrative considerations. Consequently, the organization of the handbook that follows first describes the ETC and then addresses factors of importance to teachers and administrators considering its use.

II. THE ENTREPRENEURSHIP TRAINING COMPONENTS

The Development Process

The Entrepreneurship Training Components went through an extensive development process. Following is an overview of the six major steps in that process.

1. Identify key skill areas necessary for entrepreneurial success. AIR staff conducted an extensive document review and consulted the National Review Panel and other knowledgeable experts in completing this task. The following skill areas emerged as those that seem to be crucial for entrepreneurial success: (1) initial planning; (2) personnel management; (3) purchasing and inventory management; (4) daily operations; (5) pricing; (6) advertising and selling; (7) financial recordkeeping; and (8) business maintenance and growth. Within the eight areas, 25 specific skills were identified. Student objectives for the modules were developed from those skills.

2. Locate and review existing entrepreneurship instructional materials in vocational education. AIR staff conducted a systematic survey and computerized search covering the past ten years of literature on vocational/career education. In addition, the Small Business Administration, the Minority Business Development Agency, the ERIC Clearinghouse for Vocational and Technical Education, and other possible sources of existing entrepreneurship curriculum materials were consulted. Knowledgeable individuals, including the National Review Panel and American Vocational Association Divisional Vice Presidents, were also consulted.

The project collected approximately 400 sets of materials. Roughly 250 pertained to entrepreneurship in general, while the remainder were related to businesses within the seven major vocational disciplines. The majority of the 250 entrepreneurship materials were developed by the Small Business Administration and were targeted for adults who have already made the decision to start a small business. The goal of AIR's materials, on

the other hand, was to open the minds of students to the option of eventual self-employment in running a small business operation.

A Document Review Sheet was developed for assessing the instructional resources collected for possible inclusion in the Entrepreneurship Training Components. On the basis of this review, key resources addressing both general entrepreneurship concepts and factors pertinent to specific businesses were identified. The information contained in these resources was instrumental in determining the structure and the content of AIR's entrepreneurship training materials.

3. Identify 35 specific businesses within the seven major vocational education disciplines that would be most likely to provide entrepreneurship possibilities. AIR staff analyzed 78 businesses within the seven disciplines. Figure 1 shows the selection criteria used in identifying businesses likely to provide entrepreneurship possibilities.

The AIR analysis was submitted to the National Review Panel, the ED Project Officer, ED vocational education program specialists for each discipline, and other knowledgeable experts. In addition, vocational educators were asked what businesses their students would be likely to start if they had entrepreneurship plans. On the basis of this extensive analysis, 35 specific businesses were chosen for module development.

4. Develop the core module and 35 business-specific modules. Module developers interviewed real-life entrepreneurs and reviewed entrepreneurship and business-specific materials. Case studies written for the modules were developed primarily from the firsthand experiences of people who are currently running small businesses. Guidelines were developed for the module writers to follow, and each module was carefully reviewed and revised prior to field testing.

5. Field test and revise modules prior to dissemination. Each module was field tested in an attempt to gather evaluation data under conditions of actual module use with real teachers and students in their own settings.

FIGURE 1

SELECTION CRITERIA FOR CHOOSING THE 35 BUSINESSES

1. Does the professional literature reflect anticipated growth for this business?

   Comments: Primary sources were 1979 issues of Voc Ed and the Occupational Outlook Quarterly.

2. Do Department of Labor statistics predict that there will be a faster-than-average growth rate for this business (or plentiful job opportunities regardless of growth rate)?

   Comments: Primary sources were the 1978-79 Occupational Outlook Handbook (OOH) and the 1978 edition of Occupational Projections and Training Data (Bulletin 2020). The OOH states that job opportunities in a particular business or industry usually are favorable if employment increases at least as rapidly as in the economy as a whole, but a large occupation that is growing slowly may offer more openings than a fast-growing small one. Therefore, both the predicted employment growth rate and the predicted number of average annual openings were considered.

3. Is this business represented in current vocational education curricula?

   Comments: The OOH was the source used for occupational titles, as it describes occupations in detail and discusses predicted employment trends. For some businesses, there was not a simple correspondence to current voc ed curriculum offerings. This problem necessitated estimates of secondary student enrollment for some occupations, using ED's instructional titles in its summary data report for vocational education enrollments during the 1978 program year.

4. Will this business affect a broad rather than a narrow spectrum of the student and employee population?

   Comments: Current voc ed student enrollments, the predicted employment growth rate and average annual openings for occupations, and overall employment, economic, and lifestyle trends predicted for the United States were taken into account.

5. Does a task analysis indicate that this business is amenable to entrepreneurship?

   Comments: Primary sources were the OOH task descriptions and discussions in the professional literature.

Note: In addition to the above criteria, for each voc ed discipline we calculated what percentage of the total 1978 secondary student enrollment for that discipline was represented by enrollments in courses related to businesses that emerged as likely entrepreneurship possibilities.

The evaluation design for the field test called for 24 sites stratified on dimensions of geographical location, rural/suburban/urban setting, and institutional type:

- comprehensive high schools;
- consolidated rural high schools;
- vocational high schools;
- vocational-technical schools;
- regional vocational centers; and
- schools operating with joint vocational districts.

The field test results provided direction for improving the modules and demonstrated the modules' capability of producing their intended outcomes. Modules were revised on the basis of field test feedback.

6. Disseminate the Entrepreneurship Training Components. The Entrepreneurship Training Components are being disseminated at six regional workshops held to familiarize potential users with the materials and how they can be used. Technical assistance will be provided to state and/or local vocational education administrators who seek planning assistance in use of the modules.

Module Titles

Figure 2 shows the entrepreneurship module titles. Instructors may want to present Module 1 before introducing any of the business-specific modules. Module 1, which is lengthier than the other modules, presents factors involved in owning any small business. The terms introduced in Module 1 are used in the business-specific modules with a restatement of their definitions. The business forms used are also the same, with some minor changes to fit each specific business. Module 1 provides an introduction to owning a small business in addition to some skills and activities that, due to their general nature, are not covered in the business-specific modules.

FIGURE 2

LIST OF ENTREPRENEURSHIP MODULE TITLES

Vocational Discipline	Module Number and Title
General	Module 1 - Getting Down to Business: What's It All About?
Agriculture	Module 2 - Farm Equipment Repair
	Module 3 - Tree Service
	Module 4 - Garden Center
	Module 5 - Fertilizer and Pesticide Service
	Module 6 - Dairy Farming
Marketing and Distribution	Module 7 - Apparel Store
	Module 8 - Specialty Food Store
	Module 9 - Travel Agency
	Module 10 - Bicycle Store
	Module 11 - Flower and Plant Store
	Module 12 - Business and Personal Service
	Module 13 - Innkeeping
Health	Module 14 - Nursing Service
	Module 15 - Wheelchair Transportation Service
	Module 16 - Health Spa
Business and Office	Module 17 - Answering Service
	Module 18 - Secretarial Service
	Module 19 - Bookkeeping Service
	Module 20 - Software Design Company
	Module 21 - Word Processing Service
Occupational Home Economics	Module 22 - Restaurant Business
	Module 23 - Day Care Center
	Module 24 - Housecleaning Service
	Module 25 - Sewing Service
	Module 26 - Home Attendant Service
Technical	Module 27 - Guard Service
	Module 28 - Pest Control Service
	Module 29 - Energy Specialist Service
Trades and Industry	Module 30 - Hair Styling Shop
	Module 31 - Auto Repair Shop
	Module 32 - Welding Business
	Module 33 - Construction Electrician Business
	Module 34 - Carpentry Business
	Module 35 - Plumbing Business
	Module 36 - Air Conditioning and Heating Service

The business-specific modules are listed by vocational education discipline. Agriculture, Business and Office, and Occupational Home Economics each have five modules. Marketing and Distribution, and Trades and Industry, whose occupations lend themselves easily to entrepreneurship and whose instructional programs have large student enrollments, have seven modules each. Health, whose career options often are linked to large institutional health care providers rather than small businesses, and Technical, which often requires advanced education beyond the secondary level, have three modules each.

Module Elements

Each module consists of a Student Guide and a Teacher Guide. Each Student Guide has four major parts:

1. Introduction. This briefly describes the module content and poses questions to start students thinking about entrepreneurship as a career option.

2. Units. Units are related to the crucial entrepreneurship skill areas. Each unit has its own goal and student objectives. Within each unit, the content is presented as follows.

- Case study--A portion of a business case study presents the experiences of people starting their own business. People of both sexes and from a variety of ethnic, age, and geographical groups are represented in the case studies. Realistic problems and successes are included.
- Text--The text highlights points presented in the case study and gives principles for dealing with problems that emerge during a particular phase of the business.
- Learning activities--A variety of individual, discussion question, and group activities are presented to help students apply what they have learned in the unit. Teachers choose the activities most appropriate for use with their students.

3. Summary. This reviews the module's content and describes additional relevant training and education. The core module summary emphasizes that (1) small business ownership is not ideal for everyone, and that (2) before starting a business, students should acquire work experience and further training beyond studying the modules.

4. Quiz. This gives a brief quiz item for each student objective. Its use is optional, depending on teacher preference.

Each Teacher Guide also has four major parts:

1. Overview. This presents the module's purpose, its content organization, and general notes on use of the module.

2. Suggested steps for module use. This provides suggestions to teachers for introducing and presenting the module material to students. For each module unit, this section gives highlights of the case study and text, sometimes including optional points to present. It also gives responses to the learning activities. It provides suggestions for conducting a module summary and includes an answer key for the quiz.

3. Suggested readings. This lists general entrepreneurship references and appropriate business-specific resources.

4. Goals and objectives. This is a compilation of the goals and objectives for each unit of the module.

Module Content Summaries

Following are content summaries for the core module and the 35 business-specific modules.

Module 1: Getting Down to Business: What's It All About? This is the "core" module. It consists of 15 units, plus an introduction, summary, and quiz. It is designed to introduce students to what being a

small business owner is all about. The case studies present a variety of individuals and types of business, so students are introduced to small businesses representing all seven vocational education disciplines.

The 15 units, each with its own case study, text, and learning activities, relate to the key entrepreneurial skill areas as follows:

Core Module Unit	Entrepreneurial Skill Area
1. Being a Small Business Owner	Initial Planning
2. Planning a Small Business	Initial Planning
3. Setting Up a Small Business	Initial Planning
4. Choosing a Location	Initial Planning
5. Getting Money to Start	Initial Planning
6. Being in Charge	Personnel Management
7. Organizing the Work	Daily Operations
8. Buying and Keeping Track of Goods	Purchasing & Inventory Management
9. Setting Prices	Pricing
10. Advertising and Selling	Advertising & Selling
11. Keeping Records (Revenues)	Financial Recordkeeping
12. Keeping Financial Records (Expenses)	Financial Recordkeeping
13. Making Sure You Have Enough Cash	Business Maintenance & Growth
14. Keeping Your Profits High	Business Maintenance & Growth
15. Keeping Your Business Successful	Business Maintenance & Growth

The core module summary points out that:

- small business ownership isn't for everyone; and
- students will probably want to obtain work experience and additional training before starting their own small business.

Modules 2-36. These are the business-specific modules. Each consists of nine units plus an introduction, summary, and quiz. The nine units, each with its own case study, text, and learning activities, relate to the key entrepreneurial skill areas as follows:

Business-Specific Unit	Entrepreneurial Skill Area
1. Planning a (name of business)	Initial Planning
2. Choosing a Location	Initial Planning
3. Getting Money to Start	Initial Planning
4. Being in Charge	Personnel Management
5. Buying and Keeping Track of Supplies (for product-oriented business modules) OR Organizing the Work (for service-oriented business modules)	Purchasing & Inventory Management OR Daily Operations
6. Setting Prices	Pricing
7. Advertising and Selling	Advertising and Selling
8. Keeping Financial Records	Financial Recordkeeping
9. Keeping Your Business Successful	Business Maintenance & Growth

Following are descriptions of the businesses and case study individuals presented in each module.

Module 2: Farm Equipment Repair. This module follows two brothers, Juan and José Gomez, as they plan and start their own farm equipment repair business.

Module 3: Tree Service. When they were doing gardening work, Wendell and Jody Bart met a tree care service owner who needed help in climbing and trimming trees. The brother and sister took the job and worked with this service for 5½ years. Then they started their own business--Bart's Tree Service.

Module 4: Garden Center. Linda Bowman decides to leave her job at a wholesale nursery to start a garden center specializing in flowering shrubs, annuals, and houseplants. Her shop, "The Color Spot," is primarily a retail operation catering to homeowners wanting to "decorate" the

inside and outside of their homes. Linda also has a small greenhouse for growing houseplants.

Module 5: Fertilizer and Pesticide Service. In this module, Carl Eaglehorse describes how he used his 18 years of experience working for a large farm services business to plan and start his own fertilizer and pesticide service.

Module 6: Dairy Farming. Andy Raitt, a dairy farm worker, and his wife Julie, a quilt maker who likes to garden, lease a small dairy farm and begin an agricultural production business. They plan to sell milk, calves, and grain as well as vegetables from their truck garden.

Module 7: Apparel Store. Joan Caldwell studied, art, fashion design, and basic business and merchandising in high school. She worked as a salesperson for three years in a large department store; then she decided to open an apparel store specializing in fashions for petite women.

Module 8: Specialty Food Store. When Stanley Price moved from New York to California, he was amazed to discover that there wasn't a single bagel bakery in town. This prompted him to open the Bagel Broker.

Module 9: Travel Agency. During the first four years Danielle Ponti worked for a travel agency, she did everything--typed, answered phones, and wrote tickets. She was promoted to office manager and later bought a franchise to open her own branch of the travel agency.

Module 10: Bicycle Store. Ken and Nancy Nakamura had wanted to run a business together for several years. Ken had worked in a bicycle store while he was in high school and college; Nancy knew how to maintain her own bike and had worked as a sales clerk, a recreation director, and a secretary/bookkeeper. They decided to sell juvenile and adult bikes and to offer repair service.

Module 11: Flower and Plant Store. John Pollini had worked part-time in a florist shop. Charles Deane had acquired business management experi-

ence working for an insurance company. The two of them decided to open a flower and plant store in a small town.

Module 12: Business and Personal Service. This module describes male and female entrepreneurs who started a variety of service businesses--a plant rental service; a "housewifing" service; a consumer complaints service; a sandwich catering business; a do-it-yourself picture framing shop; a limousine service; a computerized dating service; a consumer referral service; and a photography business.

Module 13: Innkeeping. Jerry and Lynn Campbell describe how they acquired and restored a large Victorian house in San Francisco and converted it into a successful bed and breakfast inn.

Module 14: Nursing Service. Ramona Diaz, a registered nurse, felt burned out by the demands of working the night shift in the local hospital's intensive care unit. Working for a temporary nursing service for two years gave her the knowledge and confidence to start her own nursing service.

Module 15: Wheelchair Transportation Service. Chuck Ng always dreamed of owning his own business. For a while he thought about starting an ambulance service. But he decided to provide non-emergency medical transportation for people who needed assistance or were in wheelchairs.

Module 16: Health Spa. After taking business classes and working as a trainer at a health spa, Lucille Wolinsky decided to open a small health club for women.

Module 17: Answering Service. Linda Garcia starts a 24-hour answering service called Teleqwik in a growing city in the southwest and makes it a success.

Module 18: Secretarial Service. Teresa Scully discusses how she went from secretary to owner of her own business—Error-Free Secretarial Service.

Module 19: Bookkeeping Service. While she was still a bookkeeper for an auto body shop, Susan Haskell acquired five of her own bookkeeping clients on the side. This developed into her own small business--Independent Bookkeeping Services. Susan is now planning to open a second office.

Module 20: Software Design Company. Carol Dubin talks about how she wrote a computer program to help small business owners handle large mailing lists. With the success of this program, she started her own business designing and marketing computer programs for use on small computers.

Module 21: Word Processing Service. Alan Chow, who first helped start a word processing division in a large company, decides to start his own word processing service in his hometown.

Module 22: Restaurant Business. This module describes the methods used by Manual Hernandez in planning and starting his own restaurant business.

Module 23: Day Care Center. In this module, the student reads about the strategies used by Annie Green in planning and beginning her own day care center.

Module 24: Housecleaning Service. Jill Stewart and Dana Harrison describe their entrepreneurial experience in planning and starting their own housecleaning service business--Tender Loving Care.

Module 25: Sewing Service. In this module, Tally Smith serves as the model for a successful owner/operator of a small sewing service.

Module 26: Home Attendant Service. Home attendant services provide a variety of cleaning, shopping, cooking, and other personal services to elderly, handicapped, and chronically ill clients. The experiences of Della Jackson demonstrate how one can plan and start this type of small business.

Module 27: Guard Service. Stacy Sakura studied police science in high school and worked as a police officer. Her next step was to start her own guard service--a 24-hour car patrol for residences in upper-class neighborhoods.

Module 28: Pest Control Service. Eric Holms studied business management and plant science in high school. After working for a pest control service for two years, he decided to start his own service and to specialize in outdoor pest control.

Module 29: Energy Specialist Service. Sally and Mike O'Toole, licensed building contractors, owned their own contracting business for five years. After completing a solar apprenticeship program, they started an energy specialist service to conduct energy audits and to install and maintain solar devices.

Module 30: Hair Styling Shop. This module provides the reader with an in-depth experience in planning and starting a hair styling shop, as seen through the eyes of Dinah Simmons--a cosmetology entrepreneur.

Module 31: Auto Repair Shop. The reader of this module learns about how to plan and start an auto repair shop by following the entrepreneurial activities of Matt Zarcone--the owner and manager of In-and-Out Car Repair. Matt's shop specializes in quick tune-ups, oil changes, and brake service.

Module 32: Welding Business. Ben Miller, sole owner of West Coast Welding, shows the reader of this module how to plan and start a business that focuses on "ornamental security."

Module 33: Construction Electrician Business. Richard Novotny worked as a construction electrician for a contractor for five years. Jeff Shimus had been a salesperson and sales manager for a hardware store; he also did electrical work for home builders. The two of them decided to form a partnership doing electrical installation in new construction and selling supplies to do-it-yourself homeowners interested in home repair and remodeling.

Module 34: Carpentry Business. Ted Lasser, a journeyman carpenter, did "finish" work on new homes for a construction company. When the number of new homes being built in the area began to drop, Ted got his general contractor's license and began his own business remodeling old homes.

Module 35: Plumbing Business. In this module, Walt Powell, employed as a plumber for 10 years, demonstrates the steps he went through to plan and start his own plumbing business specializing in installation of new systems in new private homes.

Module 36: Air Conditioning and Heating Service. Willis Jones, an experienced sheet metal worker who has worked for a large air conditioning and heating service, starts his own air conditioning and heating service specializing in small installation and repair jobs.

Purpose and Use of the Resource Guide

The Resource Guide of Existing Entrepreneurship Materials provides a bibliography of the materials identified by AIR's literature search; those materials actually used to develop specific entrepreneurship modules or as key general background references; and a directory of the organizations that developed the materials. It was designed to meet the needs of local practitioners. The Guide provides the latest comprehensive listing of all entrepreneurship materials available at the secondary level (materials developed for use at the postsecondary level are also referenced). It will help meet the concerns of vocational educators regarding entrepreneurship resources.

The Guide presents the following information:

1. descriptions of key materials used in developing the training modules;
2. listings of other entrepreneurship materials identified in the literature search; and

3. a listing of organizations that have developed entrepreneurship materials.

The following pieces of information are included for the materials:

1. the name or title of the materials;
2. where the materials can be obtained;
3. a physical description of the materials (for example, 100-page book, 15-minute film, 30-frame filmstrip);
4. vocational discipline and/or occupational area addressed; and
5. a brief description of key materials and the use to which the materials might be put.

Also included in the Guide is a directory of organizations that developed the materials. Contact information is provided, such as the name of the organization and its address and telephone number. The last section is an index to the specific businesses that are discussed in the entrepreneurship materials listed elsewhere in the Guide.

III. ADVANTAGES OF THE ENTREPRENEURSHIP TRAINING COMPONENTS

The Entrepreneurship Training Components (ETC) offer important advantages to administrators, instructors, and students.

Administrator Advantages

- The modules are easily infused into existing vocational education courses. They are designed to supplement existing courses, not to compete with them.
- ETC links the existing vocational education curriculum to career awareness and exploration by presenting small business ownership as a potential career option.
- ETC helps students apply their vocational instruction to the real world of work, particularly to small business ownership.
- Entrepreneurship has always been part of the American tradition of independence. ETC increases students' understanding of this important segment of our economic system.
- Stated goals and objectives allow for easy analysis of the ETC in relation to its compatibility with local needs.
- The materials can be used in a variety of settings, allowing for teacher creativity and flexibility.
- The instructional materials have a built-in student learning evaluation mechanism in each module's quiz is keyed to the student objectives.
- The materials are self-contained, transportable, and easily accessed.

Instructor Advantages

- ETC is a comprehensive, self-contained set of modules; teachers do not need to develop additional materials.
- Teacher Guides give detailed suggestions on presenting the modules and evaluating student learning.
- Headings, summaries, and other format elements make the modules easy to follow.

- Stated goals and objectives make desired outcomes clear.
- ETC uses a case study approach that is of high interest to students.
- The ETC modules provide for instructional flexibility and adaptability. Teachers can use a variety of instructional techniques and can choose the learning activities most appropriate for their students.
- The packaging format allows for easy use of the materials. Module covers are color-coded by vocational discipline, and the materials are three-hole punched for notebook insertion and duplication. Page layout provides space for notes.
- The reading level of the student materials is not high, and reading is kept to a minimum.
- The variety of learning activities provide for a wide range of student interests and abilities.

Student Advantages

- For students already considering small business ownership as a potential career option, the ETC modules give a realistic view of advantages and disadvantages of entrepreneurship.
- For students unaware of small business ownership as a career option, the modules provide an introduction to that option.
- The case studies include a wide variety of role models with whom students can identify.
- Each unit's goals and objectives are clearly stated, so students know the purpose of the instruction and what it is intended to help them achieve.
- Students have opportunities to reinforce and apply their learning immediately through each unit's learning activities.
- The amount of reading is minimal. The learning activities emphasize active, practical application of the learning.
- Self-evaluation and group discussion and activities are emphasized, not competition with other students.
- The modules present advantages and disadvantages of small business ownership, so students can realistically evaluate the appropriateness of that career option for them.
- Students who decide that small business ownership is not desirable for them will be valuable employees due to their understanding of what running a business is all about.

- Students who find small business ownership desirable will have an idea of its rewards and risks.

- The modules emphasize the personal touch in providing a service or product that is highly valued in our society. Students will find many ideas they can use in their own entrepreneurial efforts.

IV. ADMINISTRATIVE CONSIDERATIONS

This section is directed primarily at administrators at the school or district level who are considering comprehensive or partial use of the ETC materials. However, the section is also relevant to teachers and instructors who are considering using these modules in their classrooms.

Improvements (changes) are made in school programs for one of two basic reasons.

- Some are responses to one or more isolated factors. Some changes may be attempts to:
  - keep abreast of changing conditions;
  - incorporate new techniques, methods, or ideas that have gained popular acceptance;
  - modify an existing practice; or
  - implement a new practice simply because other districts are making similar changes. The increasing use of modular instruction (rather than traditional lecture instruction) is an example of this type of change.
- Other improvements are responses to needs that have been identified by an analysis of all the interrelated factors affecting a school system.

The former change process is passive and frequently imposed by external forces, while the latter (recommended) way is active and requires the commitment of all involved. However, in both cases a change is implemented in the existing structure or content of the curriculum--with a consequent administrative reorientation.

Obviously, the first step in implementing curricula should be to conduct a well-planned effort to identify the major educational (institutional) needs and student/learner needs in a school program and compare these to the needs that the curriculum addresses. The remainder of this section will discuss the major steps in such an effort with a view toward assisting the administrator in adopting or adapting the Entrepreneurship

Training Components in his or her school. These considerations include: (1) an analysis of current program needs and ETC characteristics; (2) determination of the compatibility of the ETC materials with program needs; (3) utilization of key staff members; (4) initial program planning; and (5) actual implementation of the program.

Needs

The questions listed below can be used by administrators and teachers wishing to analyze their vocational education program needs in relation to the ETC materials.

1. What are the perceived current and desired levels of performance and achievement of the vocational and career goals expressed by students?
2. What are the perceived current and desired levels of performance and achievement of the vocational and career goals expressed by the parents of the students?
3. What discrepancies exist between perceived and desired performance and achievement? (These discrepancies, or gaps, determine program needs.)
4. Are the needs of the existing program translated into objectives?
5. How do the module goals and student objectives of the ETC materials relate to specific program needs?
6. How do the resources, content, activities, and assessment plan of the ETC materials relate to identified needs for curriculum?

Compatibility

Once vocational administrators or teachers view the ETC materials as a vehicle for improving their vocational education program, they might want to list the perceived advantages and disadvantages of including the materials in the ongoing curriculum. In other words, the compatibility of the ETC materials with the existing curriculum could be estimated. Com-

patibility checks can be made with respect to acceptance by the instructional staff, as well as by students, and adaptability to local conditions. Compatibility information can come from needs assessments and other formal and informal procedures that determine the gaps or discrepancies between educational goals and outcomes.

In considering compatability, the administrator should consider the following characteristics of the ETC materials. The "development cycle" of the ETC materials has resulted in a set of instructional modules that can be infused into an existing vocational education course or curriculum, or can be used to establish an independent curriculum, without disrupting the ongoing schedules of administrators or teachers.

- The modules are structured so as to supplement vocational educational courses or to provide a foundation for an independent course. These materials require the application of students' academic and vocational skills and interests to the task of making future vocational and career decisions.
- The curriculum consists of a core module and 35 business-specific modules with common scope, sequence, and objectives.
- Stated goals and objectives allow for easy analysis of the curriculum in relation to its compatibility with local needs.
- The ETC modules can be used in a variety of settings, can be modified to meet local scheduling requirements, and allow for teacher creativity and flexibility in presentation mode.
- The materials have built-in student self-assessment and teacher evaluation components. This information can be used for both diagnostic and instructional purposes.

Key Support

It is often difficult for the administrator to interest teachers, who are comfortable with their current classroom routines, in new materials or a different curriculum. There are some motivational techniques that are effective in developing teacher enthusiasm about adopting or adapting new materials. One technique is to identify key staff who will support implementation of the ETC materials. These may be administrators or teachers

who are the opinion leaders in the school or district, and who will be influential in securing the endorsement of others. The active involvement and support of these key personnel will serve as models for the others.

Initial Planning

In initial planning it is sometimes helpful to involve the administrator and key support staff in the review and critique of the materials. This involvement may include:

- identification of and contacting support staff and organization of planning sessions;
- discussion of methods for distributing ETC information to key support staff;
- review of the ETC materials by the planning group;
- examination of needs and ETC compatibility with existing programs;
- determination of possible options for use;
- examination of existing instructional materials;
- consideration of administrative and staffing factors related to needs, materials availability, and costs;
- examination of teacher needs for inservice training; and
- determination of plans for disseminating information about the ETC materials to administrators, school staff, and students.

While these are general factors to be discussed, each school district may have specific concerns to address. Based on the overall conclusions, the administrator can decide whether the ETC materials meet school and district needs as well as student needs.

Program Implementation

During the field test, the modules were implemented at the state, district, building, and classroom levels. For example, at two of the sites a state-level administrator coordinated module use at a number of high schools throughout the state. In other sites, the local field test coordinator was a district-level administrator who worked with a number of high schools within the district in using the modules. Other field test sites were area vocational centers where the modules were used in a variety of instructional programs in the building. Finally, in one site the modules were used by one marketing and distributive education teacher. The field test indicated that the modules can be successfully implemented at various administrative levels with varying degrees of complexity.

The modules were used with students of varying skill levels. In some instances they were used with first-year students as a motivating device. In others they were used with second- or third-year students. In these cases, the instructors felt that after students had obtained a basic level of skill development, they could more easily envision running a business that would rely on the technical skills they had learned. Finally, the modules were used in cooperative education classes. The advantage of using the modules in this setting is that the instructor does not have to worry about "taking time away" from basic skill development. Since the students are working, they have a first-hand exposure to the business world; they may be able to see the effects of a business owner's procedures regarding pricing, inventory management, or advertising. Studying entrepreneurship is a valuable way to utilize classroom time for students in a variety of job placements; entrepreneurship may be one of only a few topics that would be relevant to virtually any cooperative education student.

In field testing the modules, some administrators found it desirable to conduct the following activities in conjunction with interested teachers.

- Outline the modules' advantages. Recognizing that change is difficult and often resisted, administrators may want to share their reasons for deciding to introduce a new curriculum. Materials might be prepared and faculty meetings scheduled.

- Determine options for infusing ETC. The ETC materials can be used on a module basis, on a "unit" basis (i.e., all the modules that relate to particular vocational education discipline), or as an entire curriculum.

- Develop modes of implementation. Examples of decisions to be made in this area are whether the ETC materials are to be added to the existing vocational education program, substituted for current vocational education offerings, or introduced as a new course or program (e.g., in a district that currently has little or no instruction in entrepreneurship).

- Develop methods for obtaining faculty support. The administrator may find it desirable for faculty members to review and endorse the ETC materials. The key support staff identified earlier can be valuable in assisting the administrator in this effort. The most challenging matter to face is that of providing incentives for effective use of the ETC curriculum. The novelty of using new materials soon wanes, so continued attention to the question of faculty support would be helpful in getting the ETC materials accepted and used. A possible facilitating step might be to appoint the key support staff as resource people who would assist teachers in solving day-to-day management problems, thus reducing the chance that teachers might abandon module implementation in the face of unforeseen difficulties.

- Monitor the implementation. An evaluation plan is beneficial for judging the effectiveness and acceptability of the ETC utilization. Assessment can be carried out at the administrative level, at the instructional level, and at the student level. Evaluation can rely on student and faculty attitude measures, learning outcome assessments, or whatever other methods provide information relating to the adaptation of the ETC materials to the ongoing activities, courses, and needs of the school district. The Module Completion Record Sheet developed by AIR project staff will assist state-, district-, and building-level administrators in assessing the degree to which the ETC modules are being used.

V. INSTRUCTOR CONSIDERATIONS AND RECOMMENDATIONS

The Entrepreneurship Training Components were developed specifically to meet the needs of vocational education instructors and students. The materials incorporate principles of sound education in the following ways.

- The ETC modules have synthesized a significant amount of material and information into a coherent program with associated individual and group learning activities.
- ETC can be adopted as a total program or as pieces that relate to an existing program.
- The students know from the module objectives what they are expected to achieve.
- Each module provides ideas, suggestions, and resources for many different activities.
- The module quiz has the capacity to provide immediate feedback to students via the answer key.

For instructors considering the use of these materials in the classroom, the remainder of this section describes (1) the different instructional strategies and settings compatible with the materials, and (2) specific recommendations to the teacher regarding program planning and management.

Instructional Strategies

Alternative suggestions for teaching with the ETC modules include how to use them in a relatively traditional classroom setting, in small-group situations, and in an independent study situation.

1. Large-group traditional classroom approach. In situations where the "lecture method" is preferred, the modules may be used as a content outline for teacher presentations and subsequent student activities. The teacher may provide all necessary information and experiences to students. In this fashion, the teacher would base the presentations on the case study and text sections, and make student assignments based on the learning

activities. Suggestions for individual projects are supplied in those activities. A final examination might be based on the module quiz.

2. Small-group situations. The modules can be used effectively in a student-centered approach, with small groups of students engaged in study under the general direction of one or more discussion leaders. The learning activities contained in each module lend themselves very easily to this approach. The fact that the modules contain well-defined objectives and directions facilitates this type of instructional strategy.

3. Independent study. The modules contain the following elements that typically characterize individualized instruction.

- The objectives of the units are clearly stated so that the student knows what he or she is to learn.
- The student is an active learner rather than a passive receiver.
- The teacher can function as a learning manager and consultant for the student rather than as a dispenser of knowledge.
- The students have many opportunities to apply their knowledge or skills. They can also test themselves and receive an immediate confirmation or correction via the quiz answer key.
- Emphasis is placed on self-evaluation for the individual student rather than on competition with other students.

The various module components contain the following essential elements of individualized learning materials.

- Introduction. The purpose of this section is to give ways in which the student can profit from the material and, when appropriate, to state the module's relationship to other modules in the program.
- Objectives. These are instructional objectives that indicate exactly what the student is to learn.
- Headings. These and other descriptive features distinguish main parts and subparts, activities, and study materials.

- Activities. When a module is used in individual instruction, the case studies and text also serve as the basis for learning activities. The student is given one or more reading assignments in each unit, is sometimes given a brief research or other individual project, and is then asked to complete a series of exercises from the activities section.

- Quiz. The module quiz may be used as a posttest. It may also be presented orally so that students respond directly to the teacher, to a small group, or to the entire class. The short-answer format can be partially modified by the teacher to include essay items to which the student may respond more subjectively.

4. Contract approach. The contract approach to instructional management is a method of teaching the individual student within a large or small group by allowing for individual levels of interest and attainment, individual tastes, and individual rates of learning. It may be used in conjunction with any of the previously mentioned approaches. The contract approach generally contains the following elements.

- The contract specifies student objectives, student activities, and methods of student evaluation.

- The contract is cooperatively developed between teacher and student, with minimum requirements clearly specified by the teacher prior to its development.

- Broad time frames are usually desirable, with check points along the way (of course, this depends on the scope of the module being studied).

- Both student and teacher should have copies of the contract.

- The teacher may develop several different basic contracts from which a student may select and then individually modify the contract to reflect his or her learning style.

5. Incentives approach. The incentives approach to instructional management has been the subject of a great deal of interest over the past few years as a vehicle for improving academic performance. It may be used in conjunction with large-group, small-group, and independent-study situations.

Students might earn tokens for completing certain amounts of work on a module. The tokens, in turn, can be used to purchase a ticket to a special event that takes place near the end of the school day. Alternatively, students can be given a ticket for completing a certain amount of work. On the ticket they can write anything they want to do the next day. Another possibility is having students circle numbers on a card to represent points toward a later reward.

The incentives approach can be used very effectively with the contract approach. The contract would specify rewards that would accrue for certain behaviors. Points earned for work satisfactorily completed on a module could be redeemed for time spent in a "high interest" area. This high interest area would contain many activities that are desired and valued by the student. (Research has found that more satisfactory work is performed when the student specifies the basis for awarding points than when the teacher specifies it.)

An "incentives menu" can be used to accommodate the fact that an individual's tastes and interests fluctuate from day to day and that a person may tire of one type of reward after receiving it several times. In this situation there would be a variety of incentives from which the student would choose the reward that most appeals to him or her at that particular time. A special area of the classroom can be stocked with a large variety of games and activities. Junior high students might exchange points for the opportunity to spend time at a computer terminal or a simulation occupational laboratory. Senior high students might exchange points for an opportunity to visit a local small business owner during class time (or have the business owner come to class to talk with the students).

Options for Use of the Entrepreneurship Training Components

Most vocational educators will probably use the ETC modules in one or both of the following instructional settings:

- traditional, in which all students study the same vocational discipline; or

- diversified, in which students representing a variety of vocational disciplines are enrolled for vocational education instruction.

Following are options for using the ETC in both settings.

Traditional. All students study the core module (Module 1), first--as a group, on an individual contract basis, or according to whatever other instructional strategy the teacher decides to use. After completing the core module, students study one or more of the business-specific modules related to the discipline and course in which they are enrolled. For example, students in a traditional Occupational Home Economics course would study one or more of modules 22-26, which are directly related to that discipline.

Diversified. As in the traditional setting, all students study the core module first. Then different students study different business-specific modules from among the vocational disciplines relevant to the class makeup. The modules studied will depend on the students' vocational disciplines, job placements, and career goals.

Following are suggestions for teachers who want to provide coordinated instruction when students are studying different modules from different vocational disciplines.

- All the modules emphasize similar principles and problem-solving strategies, and many of the learning activities are similar. Teachers can lead discussions of the major concepts common to all modules and can choose group activities common to all. For example, a panel discussion by small business owners in all the fields students are studying will be of value to the entire class.

- In class or as homework, students can individually read the case studies and texts for their particular modules. They can also complete their own module's individual learning activities. Then as a group they can discuss the common principles covered in the text. Students can take turns describing how their particular case study illustrates those common principles. For learning activities that are

similar across modules, students can take turns reporting their results. This sharing of learning across modules will enhance students' understanding of other businesses in addition to the one they are studying.

- Students studying the same module can work together under the teacher's direction. For work done in class, the teacher can circulate among the module groups, providing assistance as needed.

In addition to classroom use, the ETC modules can be used by guidance personnel, placement supervisors, or others who assist students in career awareness and exploration. For example, guidance personnel could use the modules with individual students or groups of students as part of an on-going career guidance program.

One or more sets of the 36 modules placed in the school library could be used by any interested students on an individual basis.

Recommended Planning

Following are recommendations of planning steps for the teacher to take before presenting the ETC modules to students.

- Familiarize yourself with the modules, including both the Student and Teacher Guides. Major sections of the Teacher Guide are:

  - Overview;
  - Suggested steps for module use;
  - Suggested readings; and
  - Goals and objectives.

  Major sections of the Student Guide are:

  - Introduction;
  - Units (15 in the core module, 9 in the business-specific modules);
  - Summary; and
  - Quiz.

- Select the business-specific modules appropriate for use with your students. The choices will depend on the vocational discipline(s) represented in your class and your students' job placements and career goals.

- Thoroughly familiarize yourself with the core module and the business-specific modules you select for your students. Read each unit's goal and objectives, case study, text, and learning activities.

- Decide on the instructional strategies you will use in presenting the material. For example, you may decide to tape-record the case studies rather than have students read them. Or you may have students take turns reading a paragraph or two aloud.

- Plan for the daily class sessions. The Teacher Guides contain suggestions for module use, with each Unit designed to cover approximately one class period. Choose the learning activities most appropriate for use with your students. Decide if you will assign any of the material as homework.

By taking the steps recommended above and by consulting each module's Teacher Guide, you will find that planning for and presenting the ETC modules is easy.

Daily Management of the Program

This section informs potential users of various ways to capitalize on the modules' flexibility. It is primarily an anecdotal narrative of ways in which the modules were modified by users as they were being field tested, thereby giving a flavor of the modules' adaptability.

First, in regard to module learning activities, teachers should not feel that the activities are a prescriptive set of steps. Rather, they should feel free to select the activities most appropriate for their students. In other words, teachers may eliminate a certain activity if they feel their students have already mastered the material presented in the activity or if the activity is not essential for achieving the module objectives. This picking and choosing aspect of the modules makes them quite flexible.

A second component of module flexibility is in use of the student materials. Teachers can make ditto masters of the case studies and activity sheets so they can be duplicated for student use. The activity

sheets can be used as in-class or homework assignments. Portions of the Student Guide can also be displayed on an overhead projector for total-class or small-group discussions.

Third, teachers should feel free to be innovative in modifying module activities to make them more workable in their particular classes. One of the most positive results of the field test was that teachers were able to--and did--adapt the learning exercises to make them relevant for their students.

Since the core module and the business-specific modules are complementary, teachers may wish to present them in an integrated fashion rather than having students study them sequentially. Each business-specific module unit has a core module unit that corresponds to it. So teachers may want to introduce a concept (e.g., choosing a business location) by having the class study Unit 4 in the core module and then reinforce that concept by having students study Unit 2 in a business-specific module; in this manner students can see how general factors related to choosing a business site can be detailed in reference to a particular business they might want to start.

Teachers may want to carry the entrepreneurship concept one step beyond the ETC modules by having students form their own corporation (following a Junior Achievement model). In this case, have each student buy a share of the company's stock for $1. Decide on fund-raising activities that the company can conduct. When the activities have been completed, liquidate the company's assets. Any profit left after investors have been reimbursed for their initial investment can be used to have a class party, buy a plant for the school campus, contribute to a charitable cause in the community, etc.

The thrust of this section is that the teacher has complete control over the degree and type of modifications desired in the modules. Any unit can be used just as it is, since it contains a synthesis of a significant amount of material and information. On the other hand, each module provides ideas and suggestions for many different activities.

Teachers can obtain modules and continue to teach in the way they feel most comfortable, managing classroom instruction in the manner that is most beneficial for their students.

VI. EVALUATION OF THE IMPLEMENTATION

Evaluation refers to the means by which useful information about the educational program or instructional materials is collected, analyzed, and interpreted in ways that are both meaningful and useful. The audience for whom the evaluation information is intended defines the structure and content of the evaluation information. In this section we will consider two forms of evaluation:

- Instructional evaluation; and
- Student outcome information.

Instructional Evaluation

The audiences for this evaluation information are the administrators, teachers, and instructors who are primarily responsible for administering and monitoring use of the ETC materials in the vocational education curriculum. This program-level information will provide useful information for school districts in designing, modifying, adapting, or adopting the ETC materials for use in existing and ongoing programs.

The input for the instructional evaluation will be student and teacher reactions to the ETC materials, formal and informal information sources such as responses to questionnaires and surveys, anecdotal evidence, and the results of the cognitive tests included in each module. School districts may elect to collect extensive instructional information themselves by following the pre- and posttest evaluation design used in the field test of the materials or, alternatively, relying on the users' (i.e., the teachers' and students') opinions and subjective reactions to the ETC materials as summarized in the AIR project's final report. However, in either case, the collection and analysis of instructional information will provide evidence as to:

- the appropriateness of the ETC materials for the school district;

- student progress toward instructional objectives and goals;
- how well the program was implemented; and
- information required to make rational decisions about instructional strategies and program design.

The results of all tests, measures, and reports will be summarized in the final report of the project's findings. Administrators and teachers should study these results and conclusions carefully prior to making instructional decisions with regard to the organization and sequencing of the materials as well as the presentation mode. For example, based on the instructional evaluation information gathered during the field test or generated during the implementation of the ETC in a particular school district, teachers may decide that a large-group, "traditional" classroom approach would be the most appropriate and effective instructional strategy for their particular students. In this fashion teachers would base their presentations and student assignments on the case study and text and the learning activities section. Final examination might be based on the module test. A comparison of test results with the field test findings would indicate the strengths and weaknesses of this approach for these particular students and suggest alternative instructional strategies that may be more effective.

The ETC modules are easy and flexible to use in gathering instructional evaluation data if the teacher:

- reads the material prior to use;
- is familiar with the essential features of the modules and their purpose in the instructional process; briefly, these include:
  - Introduction
  - Module goals
  - Student objectives
  - Module content
  - Learning activities
  - Summary
  - Module quiz;
- determines the sequence and teaching methodology for the modules;

- develops a plan prior to the use of each module that states (1) the activities that need to be completed; (2) the procedures for completing the activity; (3) a specified date for completion of the activity; and (4) the person responsible for completing the activity; and

- compares the results of implementing the ETC module(s) with the reported field test results.

Student Outcome Information

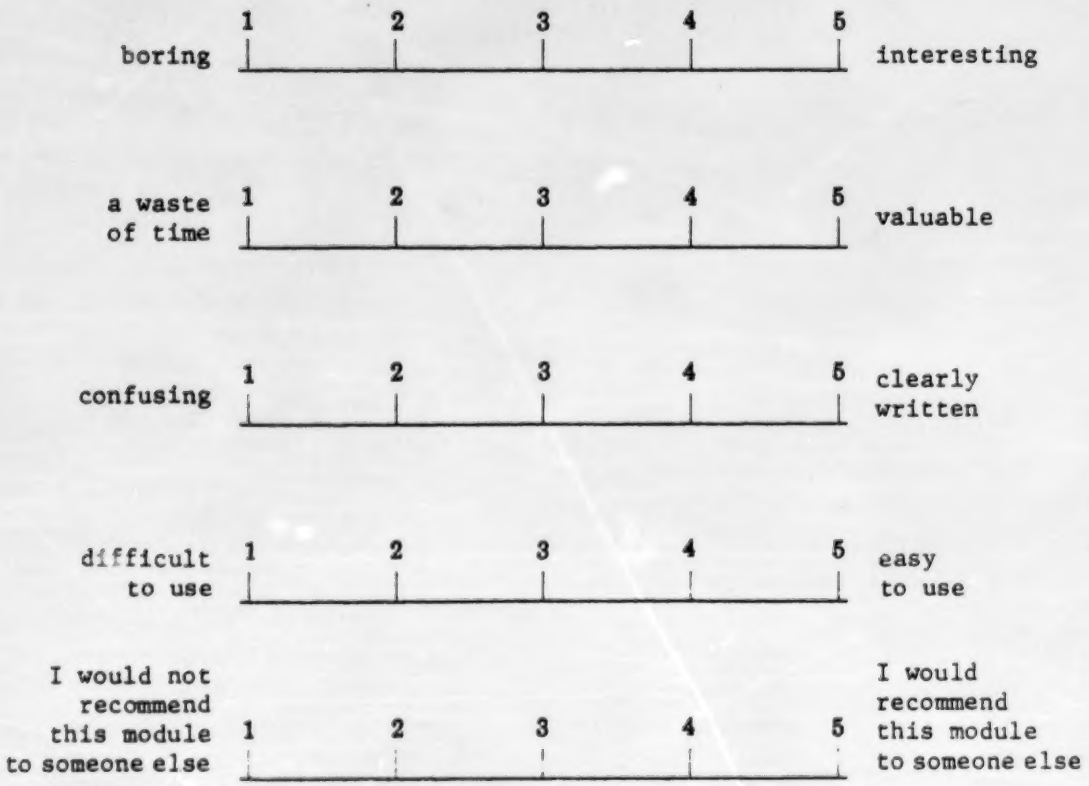
The results of the instructional evaluation can be used in a diagnostic manner to assess student progress toward identified goals and objectives, determine areas of student strengths and weaknesses, and develop a prescriptive or remedial program to compensate for skills or cognitive knowledge lacking.

The ETC materials may be adopted as a total program or as pieces that complement an existing program. In general, a large amount of material and information has been synthesized in the development of the modules and their associated individual and group learning activities. A prerequisite level of knowledge and ability has been assumed in the conceptualization and development of these materials. For example, it is assumed that students possess basic arithmetic skills that will allow them to follow the simplified instructional steps in completing a profit/loss statement (Unit 9 in the business-specific modules). If students are lacking in these prerequisite skills, they will be unable to complete the unit's activities despite the fact that they may comprehend the verbal sequence and rationale of the activities. Diagnostically, the students may require additional instruction in appropriate arithmetic areas; the prescription calls for review, exercises, and more instruction in this area. If students possess the basic prerequisite (assumed) skills, they should be able to complete the unit and its associated activities in the accomplishment of the instructional goals and objectives.

The sources of student outcome information are the informal and formal student responses to the cognitive (end-of-module) tests, student

anecdotal responses, and responses to any attitudinal questions that are posed. For example, teachers may ask students to respond to the following items after they have finished studying a module.

How would you rate this module?


boring 1 2 3 4 5 interesting
a waste of time 1 2 3 4 5 valuable
confusing 1 2 3 4 5 clearly written
difficult to use 1 2 3 4 5 easy to use
I would not recommend this module to someone else 1 2 3 4 5 I would recommend this module to someone else

Teachers should keep careful records of this information as it is closely related to subsequent implementation and instructional decisions--for example, decisions to individualize instruction, to emphasize a lecture approach, or to further modify the modules to bring them more in line with ongoing programs and curricula. In addition, these findings can be compared to the summarized field test results, which, in turn, may suggest alternative variations of instructional methods. The basic intent of these efforts is to analyze student outcomes and enhance the effectiveness of the instruction.

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